

XXVII.—*Monograph of the genus Catops*.

By ANDREW MURRAY, Edinburgh.

[Continued from p. 156.]

*Exotic Species.*18. *C. celer*, Lucas.*Catops celer*, Lucas, Explor. de l'Algérie, Anim. Art. ii. p. 225.

Oblongo-ovatus, fulvo-pubescent; capite subtilissime granario; antennis ferrugineis, ultimis articulis fuscis; thorace granario, angulis posticis acuminatis; elytris granariis; corpore infra granario; pedibus ferrugineis femoribusque nigricantibus. Long. $1\frac{1}{2}$ lin., lat. $\frac{3}{4}$ lin.

Very closely allied to the *C. nigrita*; black, covered with a yellow, silky, very dense pubescence. The head is very finely shagreened and scarcely pubescent. The labial as well as the maxillary palpi are of a clear ferruginous colour. The antennæ are ferruginous, with the four last joints of a deep brown. The thorax is very finely shagreened, much more pubescent than the head; it is very slightly convex, rounded on the sides, with the posterior angles projecting and pretty strongly acuminate. The scutellum is very finely granulated and scarcely pubescent. The elytra are a little more strongly granulated than the head and thorax, and are very pubescent. All the body below is granulated, scarcely pubescent, and of the same colour as above. The legs are ferruginous, very lightly pubescent, with the thighs blackish.

Found by M. Lucas in Algeria under stones in the month of June. He mentions Oran and the Bondjaréa as localities where he took it, and he observes that it is very agile.

The above description is reproduced from that of M. Lucas. I have seen specimens in his possession, but not having had an opportunity of comparing them with the specimens in my own cabinet, I am not able to pronounce positively upon them. The same remark applies to the other two species from Algeria described by him (*marginicollis* and *rufipennis*).

19. *C. fuscipes*, Menetr.

Catops fuscipes, Menetries, Mém. Acad. Imp. Sciences St. Pétersb. 6 sér. vi. (1849) p. 53.

“Oblongo-ovatus, convexus, posterius valde angustatus pallide rufo-ferrugineus; capite, thoracis dorso, pectore abdomineque nigro-fuscis; antennis tenuibus longitudine dimidii corporis;

thorace antrorsum angustato, lateribus deflexo, angulis posticis productis acutis; elytris stria tantum suturali exarata*." Long. $1\frac{3}{4}$ lin., lat. $\frac{3}{4}$ lin.

Menetries says that this species somewhat resembles his *C. lateritius* (already described (No. 5) in the first group), but that it is much more convex and *narrower behind, with the posterior angles of the thorax pointed and prolonged backwards*; he adds that moreover it has no perceptible striæ on the elytra, except one along the suture, but that it is particularly the colour which distinguishes it at the first glance.

I have not seen this species, but the above description, particularly the portion which I have printed in italics, would seem to indicate an affinity to *C. nigricans*, and the pale colour has probably arisen from immaturity. I have therefore, in the absence of any more precise information, placed it in this group.

Menetries does not mention its locality, but as it comes immediately after *C. lateritius*, and he institutes comparisons between them, it is probable that they were found not far from each other. In that case the locality of this species would be Novaia Alexandrovskaiâ.

20. *C. vestitus*, mihi.

Oblongo-ovatus, fuscus, dense griseo-pubescens; antennis clavatis, nigris, basi ferrugineis; thorace transverso, granulato, angulis posticis obtusis; elytris stria suturali.

Long. 2 lin.

Oblong-oval, blackish-brown; mouth and legs ferruginous; clothed with a thick, coarse, griseous pubescence, of a more lively fulvous colour on the thorax. The antennæ are clavate, black, except at the base, which is ferruginous; they are not so slender at the base as is usually the case, making the club look less thickened than it is in reality. The first joint is large, the second shorter and narrower; the rest are nearly all of equal length, with the exception of the seventh and ninth, which are a little longer, and the eighth, which is shorter. They gradually increase in thickness up to the seventh, which is the broadest and largest of them all; the eighth joint is smaller and thinner than the seventh and ninth, but not very minute; the terminal joint is suddenly acuminate at the tip, looking as if truncate at the end, with a short spike projecting from the centre. The thorax is transverse, broadest a little behind the middle. The posterior

Fig. 23.



* Menetries in *loc. cit.*

angles are obtuse, except at the very angle, where there is an exceedingly minute rectangular starting-point. The surface is coarsely granular. The scutellum is small. The elytra are granulated and have a distinct sutural stria, but apparently no others—at least the traces, if any, are exceedingly indistinct. The anterior tarsi and first joint of the middle tarsi are dilated in the male.

This species has some resemblance to *C. chrysomeloides*, but it is smaller, the thorax is narrower and more transverse, the antennæ are not so heavily clubbed, and the joints are differently proportioned. It has also some resemblance to *C. tristis*, but the form of the thorax as well as a difference in the pubescence distinguish it. The pubescence is coarser and more dense than in most other species.

From the East Indies (Boys' collection). The above description is taken from a unique (male) example kindly presented to me by my friend Mr. Westwood.

21. *C. Spencianus*, Kirby.

Choleva Spenciana, Kirby, Fn. Bor. Amer. p. 108 (1837).

Catops cadaverinus, (Esch.) Mannerh. Beitr. zur Käf. Faun. der Aleutischen Inseln, Sitka, und Calif., aus d. Bull. Naturforsch. Moscow, xvi. (1843) p. 82. no. 173.

— *fuscus*, Hoff. var. Dej. Cat. 3rd ed. 133.

“Oblongo-ovatus, fusco-piceus, tenue-pubescentis; antennis mediocribus, clavatis, basi ferrugineis; thorace brevi transverso, basi parum latiore, angulis posticis obtusis; elytris rufescentibus punctatis, stria suturali impressa; pedibus ferrugineis piceis; femoribus infuscatis.

“Long. $1\frac{1}{2}$ lin., lat. 1 lin.*”

Fig. 24.



Body black, covered with decumbent pale hairs. Head minutely punctured; antennæ shorter than the prothorax, the two first joints ferruginous, the eighth shorter and smaller than the rest; mouth and palpi ferruginous; prothorax not visibly punctured, with all the angles rounded; base with a slight sinus on each side; elytra acute, very minutely punctured, with a hair emerging from each puncture, without furrows, except a single one parallel with the suture, ferruginous, black at the tip; abdomen piceous, rufous at the base; legs ferruginous.

Found in the Sitka Islands by Eschscholtz and Kuprianoff.

A comparison of the authentic unique specimen of Kirby's *Choleva Spenciana* preserved in the British Museum, with specimens of Mannerheim's *Catops cadaverinus*, shows that they are the same species.

* Mannerheim in *loc. cit.*

Mr. Kirby remarks regarding it, that "This species appears to present the type of a new family of *Choleva*, not noticed in Mr. Spence's 'Synopsis Sectionum' in his admirable Monograph of that genus. From his first section (*Choleva*, Steph.) it borrows the rounded posterior angles of the prothorax; from his second (*Catops*, Steph.) its clavated antennæ; and from his third (*Ptomaphagus*, Steph.) its unfurrowed elytra: it seems properly included in the second, with which it most agrees in habit*."

Var. *b*. Mann. Bull. de la Soc. Mosc. 1843, pp. 173, 254.

Ferrugineo-testacea; capite fusco; thoracis disco antennisque infuscatis; elytris pallide livido-testaceis, postice nonnihil obscurioribus.

As Count Mannerheim observes, this species is somewhat allied to *C. morio*, Erichs. (*fuscus*, Gyll.), but distinguished from it by the thorax being smaller and narrower and the elytra longer. The colour both of the pubescence and body is paler.

In carcases in the island of Afognak; taken sparingly in the month of August by M. Holmberg, who also took it in California. It was likewise brought by M. Frankenhäuser from the interior of the Peninsula of Kenai.

For the figure of this and the other American species I am indebted to my friend Dr. Leconte of Philadelphia, who has kindly furnished me with drawings of them made expressly for my use in this paper. They are in half outline, and all his figures are four times enlarged. The head is brought up simply to show proportions.

22. *C. brunnipennis*, Mann.

Catops brunnipennis, Mann. Nachtrag zur Käfer-Fauna der Nord-Amerikanischen Länder der Russischen Reiches, Mosc. 1853, p. 14.

"Oblongo-ovatus, convexus, crebre subtilissime reticulo-
lato-strigulosus, nigro-piceus, griseo-pubescentis; antennis thorace vix brevioribus, ferrugineo-testaceis, clava parum incrassata fusca, articulo octavo minutissimo; thorace longitudine sesqui latiore lateribus modice rotundatis, antice latitudine basis haud angustiore, angulis omnibus subrotundatis; elytris obscure castaneis, apice subacuminatis, stria suturali leviter exarata; pedibus piceo-testaceis.



"Long. $1\frac{3}{4}$ lin., lat. $\frac{5}{4}$ lin.

"Longer than *C. cadaverinus*, Esch., more narrowed behind,

* Kirby in *loc. cit.*

besides differing from it in having the antennæ more slender, the thorax much broader, shorter, and not narrowed in front.

"Found tolerably frequently near the river Tschunuktnu in the Peninsula of Kenai, in carcasses at the end of June, M. Frankenhäuser*."

The reader owes the figure of this species to Dr. Leconte.

23. *C. luridipennis*, Mann.

Catops luridipennis, Mann. dritten Nachtrag zur Käfer-Fauna der Nord-Amerikanischen Länder des Russischen Reiches, Mosc. 1853, p. 84.

"Ovatus, convexus, crebre subtilissime reticulato-strigulosus, nigro-piceus, griseo-pubescent; antennis thorace nonnihil longioribus, crassiusculis nigris, articulo octavo minuto; thorace longitudine fere duplo latiore, lateribus rotundato, antice latitudine basis haud angustiore, angulis omnibus rotundatis; elytris obscure castaneis, apice obtusis rotundatis, stria suturali leviter exarata; tarsis rufis.



"Long. $1\frac{1}{2}$ lin., lat. $\frac{5}{4}$ lin.†"

Mannerheim says that this species is allied to his *C. brunni-pennis*, but is shorter, and is besides distinguished by having the antennæ thicker, the thorax shorter, its sides more rounded, and the elytra rounded at the apex.

Collected in carcasses in the months of July and August by M. Frankenhäuser on the banks of the Tschunuktnu in the Peninsula of Kenai: not frequent.

24. *C. simplex*, Say? Lec.

Catops simplex, Say? Journ. Acad. Nat. Sc. Philad. v. 184; Leconte, Synopsis of the Silphales of America in Proceedings of Acad. Philad. 1853, 281.

"Piceus, fulvo-sericeus, dense punctulatus; thorace anteriorum subangustato, lateribus rotundatis, basi late rotundato; elytris obsolete striatis, stria suturali profundiore; antennis basi testaceis; tibiis calcaribus mediocribus armatis.

Fig. 27.

"Long. $1\frac{3}{4}$ lin.



"The anterior tarsi and first joint of the middle tarsi of the male are moderately dilated; the antennæ are as long as the head and thorax, moderately thickened; the seventh joint is a little larger than the sixth, and equal to the ninth; the eighth is about one-half smaller‡."

* Mannerheim in *loc. cit.*

† *Ibid.*

‡ Leconte in *loc. cit.*

The above is Dr. Leconte's description ; the following is Say's :
 "Pale brownish, sericeous ; terminal and five basal joints of the antennæ rufous. Inhabits Arkansas. Head dark ferruginous ; antennæ dark ferruginous, the five basal joints and terminal joint rufous ; palpi and mandibles ferruginous ; thorax rather paler than the head, quadrate, a little transverse, sides regularly arcuated ; posterior margin not wider than the anterior ; posterior edge rectilinear ; angles rounded ; elytra paler than the thorax, light brownish, with obsolete striæ, more obvious towards the tip ; very numerous minute punctures furnishing minute hairs ; beneath piceous ; feet rufous ; thighs yellowish beneath. Length nearly $\frac{5}{20}$ ths of an inch. This species occurred on dung*."

Dr. Leconte in speaking of his species remarks, that he is not positively certain that it is Say's species, which was found in Arkansas, while his was from New York. He adds, "The thorax is more narrowed in front than described by him ; although the legs are in reality black, the lustre of the fulvous hair is such, that one might readily be tempted to describe them as testaceous at base."

25. *C. clavicornis*, Lec.

Catops clavicornis, Lec. Synopsis of Silphales of America in Proceed. Acad. Philad. 1853, 281.

Fig. 28.

"Oblongo-ovatus, ater, subtiliter pubescens, dense punctulatus ; thorace antrorsum valde angustato, lateribus rotundatis, basi late rotundato ; elytris versus apicem obsolete striatis, stria suturali profunda ; antennis thorace brevioribus, magis clavatis.

"Long. $1\frac{3}{4}$ lin.



"One female : New York. This species is readily distinguished from the preceding (*C. simplex*) by the shorter, more clavate antennæ, which are only indistinctly testaceous at the base ; the seventh joint is about twice as large as the sixth ; the eighth is smaller than the sixth, and appears only about one-third as large as its neighbours. The spines of the tibiæ are somewhat smaller than in the preceding species (*simplex*)†."

2nd Subdivision. *Thorax forming a continuous or nearly continuous line with the elytra ; middle tarsi of the males widened in some species, in others not.*

In the last subdivision our arrangement led us gradually from

* Say in *loc. cit.*

† Leconte in *loc. cit.*

the species with slender antennæ to those with the heaviest and thickest-clubbed antennæ. The affinity to these leads us now to reverse this order, and to commence this subdivision with those having similar thick antennæ.

A. *Antennæ heavily clubbed and middle tarsi widened in the males.*

26. *C. fumatus*, Erichs.

Choleva Watsoni, Spence, Linn. Trans. xi. 156.

Catops agilis, Fab. Syst. Eleuth. ii. 565. 6; Gyll. Ins. Suec. i. 277. 2; Panz. Faun. Germ. 95. 10; Duft. Fn. Aust. iii. 75. 4.

Catops fumatus, Erichs. Käf. d. M. Br. i. 240. 12; Sturm, Deut. Fn. xiv. 31. 15. t. 176. f. c. C; Heer, Fn. Helv. i. 382. 15; Redt. Fn. Aust. 144. 7; Kraatz, Stett. Ent. Zeit. xiii. 436. 22; Fairm. & Laboulb. Fn. Ent. Fr. i. 303. 14.

Oblongo-ovalis, fusco-piceus; *antennis brevibus, clavatis, basi apiceque ferrugineis*; thorace brevi, basi latiore, *angulis posticis rectis*; elytris pedibusque testaceis.

Long. $1\frac{1}{2}$ lin.

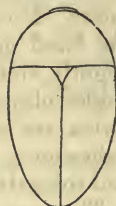
One of the smaller species. Oblong oval. Deep brown. Antennæ short and thick, a little longer than the thorax, brown; last joint broader than long, both it and the three first joints ferruginous. Head black, densely punctate. Thorax with reddish transparent margins, slightly arched; densely and finely punctate, almost twice as broad as long, as broad at the base as the elytra, or very nearly so, narrowed in front; posterior angles right-angled, pointed; posterior margin almost straight. Elytra oval, acuminate, densely punctate, without traces of striæ, except the sutural; reddish-brown, often brownish at the extremity. Under side blackish-brown. Legs ferruginous.

Distinguished from the other European species of this subdivision, except *alpinus* and *scitulus*, by its short, thick, heavily-clubbed antennæ.

The *alpinus* is clearer in colour, is longer, and has the thorax usually narrower than the elytra. *Scitulus* differs from *fumatus* in having the antennæ longer, the elytra broader, the posterior angles of the thorax projecting, and the colour somewhat different, the elytra being brown, without the reddish tint which is characteristic of *fumatus*, particularly at the base of the elytra, and having a marked sericeous lustre.

One of the commonest species. It is found in Scotland and England, and all over Europe, under detritus, in decaying fungi and under leaves.

Fig. 29.



27. *C. alpinus*, Gyll.

Catops alpinus, Gyll. Ins. iv. 3121. 2; Heer, Fn. Helv. i. 318. 11; Kraatz, Stett. Ent. Zeit. xiii. 435. 21.

Catops subfuscus, Kellner, Stett. Ent. Zeit. viii. 177. 4; Redt. Fn. Aust. 771.

Oblongo-ovalis, fusco-piceus; *antennis abrupte clavatis*, Fig. 30.*

basi ferrugineis; thorace brevi, *angulis posticis obtusiusculis*; elytris pedibusque rufo-brunneis.

Long. $1\frac{1}{2}$ – $1\frac{3}{4}$ lin.

Very like *C. fumatus*, but usually somewhat larger, with a narrower thorax, the posterior angles of which are obtuse, and the basal margin not so broad as the elytra. The antennæ are as long as the head and thorax, with the basal joints reddish and thick; club blackish; the last joint is usually black, but sometimes yellowish at the tip. The head is black, densely and finely punctate, with a yellowish pubescence. The thorax is blackish-brown, densely punctate, densely clothed with yellow hairs, at the basal margin not so broad as the elytra, cut straight, and slightly sinuate on both sides of the scutellum, the anterior angles obtuse and the posterior angles slightly rounded. The elytra are oval, densely punctate, lightly clothed with yellow pubescence, clear reddish-brown, generally blackish at the tip and towards the suture. The legs are brownish-red.



The normal specimens are readily distinguished from *fumatus* by their larger size and more elongate form, and by the thorax being narrower than the elytra; but these characters are sometimes wanting, and in form the smaller specimens do not differ from *C. fumatus*; the clearer colour, the particularly strong dark club of the antennæ with its eighth joint proportionately smaller, then serve to distinguish it; but on the whole I am very doubtful of its being more than a variety of *fumatus*, and it is with hesitation I have placed it as a distinct species.

Generally distributed over the north of Europe; but I have not yet seen British specimens.

28. *C. brevicollis*, Kraatz.

Catops brevicollis, Kraatz, Stett. Ent. Zeit. xiii. 436. 23.

“Ovatus, fusco-piceus; *antennis ferrugineis obsoletissime clavatis, articulo ultimo duobus præcedentibus longitudine æquali, acuminato*; thorace fusco, transverso, basi latiore, *angulis posticis rotundatis*; elytris substriatis pedibusque rufo-testaceis.

“Long. $1\frac{1}{2}$ lin.”

I have not seen this species. The following is M. Kraatz's description:—

* The comparative breadth of the elytra is rather exaggerated in this figure.

"Nearly in the middle between *C. fumatus* and *C. scitulus*. Easily distinguished from both by the wholly different thorax and form of the antennæ. Pitchy-brown; elytra and legs brownish-yellow. The antennæ are somewhat longer than the head and thorax, reddish-brown throughout; the club scarcely perceptibly thickened; the five last joints are only a little stouter than those preceding, and are of equal breadth; the first joint is somewhat longer and a little stouter than the second; the third somewhat shorter than the second, distinctly larger than the fourth, almost equal to the sixth; fifth scarcely larger than those on each side of it; seventh half as long again and somewhat stouter than the sixth, equal to the ninth; eighth scarcely slenderer, and half as long as those on each side of it; tenth a little shorter than ninth; eleventh as long as ninth and tenth together, from the middle outwards sharply acuminate. The head is pitchy-black, very finely moderately densely punctate; the mouth brownish-yellow. The thorax of the breadth of the elytra, broadest at the base, more than twice as broad as long, tolerably strongly and symmetrically narrowed from the base towards the front. The anterior angles are rounded, somewhat depressed; the obtusely rounded hinder angles project a little beyond the anterior margin of the elytra; the posterior margin is very feebly sinuated on both sides near the middle; the upper side is moderately, densely, finely shagreen-punctate, pitchy-black; the sides and posterior margin brownish, tolerably closely covered with a long yellowish-grey pubescence. The elytra are uniform, only slightly narrowed behind, densely and finely punctate, with a slight bloom or hoar-frost on them, sparingly and finely pubescent, brownish-yellow. The under side of the body is pitchy-black. The legs are reddish-yellow*."

M. Kraatz has established this species upon one example from Sicily, communicated by Zeller to the Royal Museum of Berlin.

29. *C. scitulus*, Erichs.

Choleva fumata, Spence, Linn. Trans. xl. 155. 4.

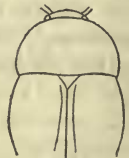
Catops scitulus, Erichs. Käf. d. M. Brand. i. 241. 13; Sturm, Deutschl. Faun. xiv. 33. 16; Redt. Faun. Aust. 772; Kraatz, Stett. Ent. Zeit. xiii. 437. 24; Fairm. & Laboulb. Fn. Ent. Fr. i. 304. 17.

Ovatus, fuscus; antennis leviter clavatis, ferrugineis; thorace postice latiore, *angulis posticis productis, rectis*; elytris pedibusque obscure fusco-testaceis.

Long. $1\frac{1}{2}$ lin.

Oval, brown. Antennæ as long as head and thorax, ferruginous, a little deeper before the

Fig. 31.



* Kraatz in *loc. cit.*

extremity. Head brownish-black, densely punctate. Thorax large, deep brown, densely punctate, only one-third broader than long, as broad at the base as the elytra, narrowed in front from the middle, rounded on the sides; posterior angles pointed, a little projecting behind, which makes the posterior margin visibly sinuated on each side. Elytra oval, slightly acuminate, densely punctate, without vestiges of striæ, except the sutural; testaceous-brown, extremity blackish. Legs ferruginous.

Resembles *C. fumatus*, but differs by having the antennæ longer, the elytra broader, and the posterior angles of the thorax projecting a little behind, and its colour darker and concolorous; and covered with a fine silky pubescence, so that when looked at from behind, a paler sericeous band appears to stretch across the elytra.

Not common. Has been taken near Berlin, in Thuringia, Erlangen, Switzerland, near Paris, near London, and in the south of England. I have not seen any examples taken in Scotland.

B. *Antennæ not heavily clubbed; middle tarsi of males rarely widened.*

30. *C. depressus, mihi.*

Breviter ovatus, postice attenuatus, ferrugineus; antennis subfiliformibus; thorace transverso, subdepresso, postice latiore, *lateribus postice leviter inflexis*; angulis posticis fere acutis; elytris pallidioribus, substriatis.

Long. $1\frac{7}{8}$ lin.

Entirely of a pale ferruginous colour; the elytra paler, and the legs testaceous. The antennæ are slender, pale ferruginous; first joint stouter and longer than the second; third joint nearly twice as long as the second; fourth nearly as long as the third; fifth and sixth joints nearly equal in length—if there is any difference, the fifth is longer than the sixth, but this is scarcely perceptible; they are also all of the same breadth, and each is shorter than the third; the seventh is a little longer than the sixth, and broader; the eighth is only half as long as the seventh, but scarcely narrower; the ninth and tenth are nearly equal in length, rather broader than the seventh; the eleventh is nearly round, but with a slight obtuse point at the tip. Head brown, pretty

Fig. 32.*



* The sinuations of the thorax and prominence of the shoulders are rather exaggerated in this figure.

closely and distinctly punctate, most deeply in front, and with a shallow frontal depression; clothed with a yellowish pubescence. Thorax transverse, subdepressed, narrowest in front; the posterior angles meeting, and as broad (or nearly so) as the base of the elytra, the lateral margins with a slight appearance of inflexion just before the posterior angles; the anterior angles rounded; the posterior angles somewhat acute; posterior margin broadly sinuate towards the sides; shagreen-punctured, clothed with a yellowish pubescence. Elytra $2\frac{1}{2}$ times as long as the thorax, ferruginous-red; shoulders prominent, and tapering from them towards the apex; turned rapidly in at the apex, so as to make it appear almost slightly truncate; a depression surrounds the scutellum (which is large and triangular) and extends along on each side of the suture for more than half the length of the elytra, the back of each elytron rising in a somewhat humped manner from the depression; there is a deep sutural line running up the middle of this depression; it touches the suture at the apex, expands as it goes along, and contracts almost to the suture again when it reaches the scutellum; the elytra are tolerably distinctly striated, the striæ deepest at the apex; shagreen-punctured, and clothed with a close testaceous yellow pubescence. Legs and under side of same colour as upper side, but rather paler, clothed with a similar pubescence.

At first sight this species is very like *fuscus*, many specimens of which have the same depression on the back of the elytra; but it is distinguished at once by the different form of the posterior part of the thorax, which in *fuscus* turns in to meet the base of the elytra, while in this species it does not. The joints of the antennæ are also somewhat different in their proportions, and the elytra taper more rapidly to the apex, and the apex itself at its extremity has a tendency to become semi-truncate for a short space, while in *fuscus* the apex is rounded off to the suture. There is, however, no doubt that this is very much akin to *fuscus*, and, in a strictly natural arrangement, should come next to it; but no arrangement will provide for all the aberrant forms which occur, and an occasional separation of nearly allied species must be submitted to, for the sake of the greater facility of determination afforded by artificial divisions.

The above description is taken from a single female specimen which I found in M. Chevrolat's collection, and which, although unique, he has kindly ceded to me. It stood among his European species, but the exact locality was not mentioned.

31. *C. umbrinus*, Erichs.

Catops umbrinus, Erichs. Käf. d. M. Brand. i. 235. 4; Redt. Fn. Aust. 771; Kraatz, Stett. Ent. Zeit. xiii. 407. 7; Fairm. & Laboulb. i. 303. 15.

Ovatus, brunneus; antennis subfiliformibus; thorace transverso, postice latiore, angulis posticis elongatis, *acutis*; elytris substriatis.

Long. $1\frac{3}{4}$ lin.

Short oval, brown. Antennæ scarcely thickened at the extremity, ferruginous, lighter at the base, clear yellow at the apex. Head almost black; mouth reddish. Thorax densely and finely punctate, broadest behind, posterior margin sinuate, and the posterior angles pointed, projecting, embracing the base of the elytra. Elytra very slightly widened in the middle, obtusely rounded at the apex, finely and densely punctate with indistinct striæ, scarcely more visible behind. Legs reddish. Middle tarsi of males widened.

The completely oval shape of this species, the outline of the thorax fitting exactly to the elytra, distinguishes it from all but a few. Its slender antennæ distinguish it from those in the preceding section of this subdivision. It is the largest species of this section, and comes nearest to *C. velox*. Its larger size, darker colour, the posterior angles of the thorax more projected behind, and the middle tarsi widened in the males, distinguish it from that species.

Widely distributed over the Continent, but I am not aware of its having been taken in Britain*. It has been taken near Stettin, Berlin, in Austria, near Kiew, Paris, Fontainebleau, &c., on trees and under leaves.

32. *C. velox*, Spence.

Choleva velox, Spence, Linn. Trans. xi. 154. 13.

Catops velox, Erichs. Käf. d. M. Brand. i. 241. 14; Sturm, Deutschl. Faun. xiv. 3. 5. 17. t. 277. f. b. B; Heer, Fn. Helv. i. 383. 17; Redt. Fn. Aust. 144. 15; Kraatz, Stett. Ent. Zeit. xiii. 437. 25; Fairm. & Laboulb. Fn. Ent. Fr. i. 304. 18.

Ovatus, ferrugineus; capite fusco; antennis longioribus, obsolete clavatis, ferrugineis; thorace transverso, basi latiore, *marginè postico leviter sinuato*, angulis posticis rectis; elytris obsolete striatis, *subtilissime transversim rugulosis*.

Oval, ferruginous-red; head brown, reddish

Fig. 33.



Fig. 34.



* I recorded this in my 'Catalogue of Scottish Coleoptera' as having been taken by Mr. Morris Young near Paisley, but I am now satisfied that this was a mistake.

in front, extremely finely punctate. Antennæ as long as the head and thorax, slender, very feebly thickened towards the extremity, ferruginous, the last joint not more slender than the preceding, excised at the extremity. Thorax densely and finely punctate, as broad behind as the elytra, one half broader than long, rounded on the sides, narrowed in front; posterior angles right-angled, pointed a little inwards; posterior margin lightly but visibly sinuate on each side; ferruginous, with the disk darker, and the margins semi-transparent. Elytra scarcely widened in the middle, obtusely rounded at the extremity, with very indistinct striæ; surface densely punctate, finely wrinkled across. Anterior legs slightly widened at the extremity; middle tarsi not widened in the males.

Distinguished from *C. scitulus*, to which it has considerable outward resemblance, by its more slender antennæ, its paler colour, the margins of the thorax lighter-coloured than the disk, its transversely wrinkled elytra, and its middle tarsi not widened in the males.

Differs from *C. umbrinus* by its smaller size, its lighter colour, the posterior angles of the thorax not produced behind, the elytra transversely wrinkled, and the middle tarsi not widened in the males.

Found throughout Britain and over the Continent not unfrequently. It has also been taken by Chaudoir at Kiew, and by Wollaston at Madeira, where, however, it appears to be excessively rare.

33. *C. badius*, Dahl., Sturm.

Catops badius, Meg. Dahl. Col. et Lepid. 30; Sturm, Deutschl. Fn. xiv. 40. 20. t. 278. b. B; Heer, Faun. Helv. i. 383. 19; Redt. Fn. Aust. 145. 15; Kraatz, Stett. Ent. Zeit. xiii. 437. 26.

Ovatus, piceo-brunneus; antennis longioribus, obsolete clavatis, ferrugineis; thorace transverso, basi latiore, *marginè postico recto, angulis posticis rectis, prominulis*; elytris obsolete striatis.

Long. 1-1 $\frac{3}{4}$ lin.

Perfectly egg-shaped, the sharper end behind, gently convex, clear pitchy-brown, the whole upper side clothed with a fine, adpressed, yellowish-grey pubescence. The antennæ are a little longer than the head and thorax, ferruginous-yellow, somewhat thickened towards the point; the seventh joint longish, the eighth shorter, but as broad as the last, the terminal joint obtuse roundish. The head is very finely punctate, the eyes black. The thorax is finely and densely punctate, short, behind exactly as broad as

Fig. 35.



the base of the elytra, strongly narrowed in front, the anterior and posterior margins not sinuate, the sides lightly rounded, the posterior angles right-angled, somewhat projecting over the shoulders of the elytra. The scutellum large, triangular, finely punctate. The elytra are oblong-oval, widest in the middle; behind acuminate-oval, finely shagreened, with a deeply impressed sutural stria, but without traces of other striæ. The under side of the body and the legs are of the same colour as the upper, only somewhat lighter.

Distinguished from *C. velox* by its decidedly more slender form, by its colour always pitchy-brown and not reddish-brown, and by the posterior angles of the thorax somewhat projecting over the margins of the elytra.

Differs from *C. præcox* by its thorax not being wider than the elytra, and from *C. brunneus* by its larger size, and the posterior angles of the thorax not being obtuse.

This species seems rare. Sturm simply says it is found in Austria. Kraatz says he has only seen two specimens, which came from Vienna. I have not seen it.

34. *C. præcox*, Erichs.

Choleva Wilkii, Spence, Linn. Trans. xi. 157.

Catops præcox, Erichs. Käf. d. M. Br. i. 242. 15; Sturm, Deutschl. Fn. xiv. 37. 18. t. 277. f. c. C; Heer, Fn. Helv. i. 318. 18; Redt. Fn. Aust. 145. 16; Kraatz, Stett. Ent. Zeit. xiii. 438. 27; Fairm. & Laboulb. Fn. Ent. Fr. i. 304. 19.

Oblongo-ovatus, ferrugineus; antennis longioribus, obsolete clavatis, ferrugineis; thorace brevi, basi latiore, *marginè postico recto, angulis posticis obtusis*; elytris obsoletissime striatis, paulo angustioribus quam thorace.



One of the smallest species, of a peculiar shape, oblong-oval, gradually narrowed behind, with the apex somewhat truncate, brownish ferruginous, clothed with a very fine and thin yellowish pubescence. The antennæ are ferruginous-red, almost longer than the head and thorax; only the three last joints are perceptibly thicker than those preceding, and the eighth joint decidedly shorter, but not more slender than the seventh. The head is frequently brownish or blackish on the front. The thorax is large, transverse, very slightly, but still perceptibly, broader than the elytra; the sides are rounded, more narrowed in front than behind; the posterior angles obtuse; the posterior margin straight, very finely and densely punctate. The scutellum is of the form of an equilateral triangle. The elytra are oblong, straight, perceptibly narrowed behind, with the apex truncate, somewhat flat, more distinctly

punctate than the thorax, and very feebly and indistinctly striated, with the exception of the sutural stria, which is deeply impressed. The anterior tibiæ are slightly widened towards the extremity.

Where the characteristic breadth of the thorax is well developed, this species can be recognized by the base of the thorax being a little wider than the base of the elytra, and by the elytra narrowing backwards and becoming truncate: where this is less conspicuous, the smaller size, narrower shape, the straight margins of the elytra, and their narrowing behind, distinguish it from *C. velox*. From *C. badius*, its smaller size, much lighter colour, straight posterior margin of thorax not projecting backwards at the posterior angles, separate it; and it is readily distinguished from the following species (*C. brunneus*) by the finer punctuation of the elytra.

Spread over all Europe, including Scotland and England, but everywhere scarce.

35. *C. transverso-striatus*, Dej. Cat.

Catops transverso-striatus, Dej. Cat. 3rd ed. p.

Angustatus, elongatus; antennis longioribus quam capite et thorace; elytris postice attenuatis, striatis et fortiter elongatis, transversim strigosis.

Mas, elytris longissimis. Long. $1\frac{1}{4}$ lin.

Fem., elytris minus elongatis. Lat. 1 lin.

This species bears considerable resemblance to *C. præcox*, is of the same colour, but is larger, and in the male especially has the elytra much more elongate. It has also the elytra very deeply transversely strigose, and has seven distinctly impressed irregular striæ, besides a deep sutural stria.

Male. Pubescent, of a yellowish testaceous or pale brown colour. The antennæ are testaceous, slender, longer than the head and thorax. The first and second joints are long, the first a little shorter and thicker than the second; the second, third and fourth are about equal in length; the fifth, sixth and seventh are all nearly of the same breadth and thickness, but each a little shorter than the one preceding it; the eighth is slightly shorter than those on each side of it. The last three are thickened; the last is short and a little acuminate. The head is a little darker than the rest of the body, and the mouth somewhat lighter. The thorax is pubescent, smooth, not punctate, but feebly granulose, broader than long, rounded on the sides, broadest a little behind the middle, bisinuate at the base, with the posterior angles projecting slightly backwards. The scu-

tellum is large and acutely triangular. The elytra are very long, being five times the length of the thorax, and taper towards the apex in a wedge-shape. They are very deeply transversely wrinkled, with a profound sutural stria, and seven other striae less deeply impressed but still quite distinct. The apex of each elytron is somewhat rounded. The margins of the elytra are broadly inflexed, leaving a prominent lateral ridge.

Female. The above description will apply also to the female, with the following alterations:—She is much shorter and comparatively broader, and the elytra are not so disproportioned in their length. The antennæ are shorter and thicker, the base and apex much paler than the middle. The impressed striae on the elytra are much less evident, but the transverse strigations are equally distinct.

No species that I have seen has the transverse strigations so strongly marked. It may at first sight be mistaken for a very large *præcox*, but these strigations and the almost disproportionate length and wedge-shape of the elytra in the male distinguish it readily.

I found three males and one female under this name, marked as coming from Portugal, in the collection of the Count Dejean; the kindness of M. le Marquis de Laferté Senectère having placed that collection in my hands for examination.

36. *C. brunneus*, Dahl., Sturm.

Catops brunneus, Knoch, Dahl. Col. et Lepid. 30; Sturm, Deutschl. Fn. xiv. 38. 19. t. 278. f. a. A; Redt. Fn. Aust. 145. 16; Kraatz, Stett. Ent. Zeit. xiii. 439. 28.

Ovatus, piceo-brunneus, *fumatus*; capite fusco; antennis longioribus, obsolete clavatis, ferrugineis; thorace transverso, basi latiore, *marginè postico recto, angulis posticis obtusis*; elytris brunneis.

Long. 1 lin.

As large as the preceding species (*C. præcox*), but of a wholly different shape. It is broad-oval, moderately flat, behind broadly truncate, ferruginous-brown and shining. The antennæ are as long as the head and thorax, thin, gradually somewhat thickened towards the apex, the terminal joint roundish, pubescent, the eighth joint short. The head broad, pitchy-black, finely punctate; the parts of the mouth ferruginous-red. The thorax is large, broad, as broad at the base as the elytra, only slightly narrowed in front; the sides lightly rounded; the posterior angles obtuse; the basal margin straight; it is moreover slightly convex, somewhat darker on the back, very finely and densely punctate, and thinly clothed with a fine yellowish-

Fig. 37.



grey pubescence. The scutellum is obtusely triangular, densely punctate. The elytra are of a short and broad oval form, broadly truncate at the apex, finely shagreen-punctured, thinly clothed with a yellowish-grey pubescence, deeply impressed with a sutural stria, and without any traces of other striæ. The abdomen is pitchy-black; the legs are ferruginous-yellow.

The salient points in which it differs from the preceding have been already noticed. It is larger, more densely pubescent, more thickly punctate and less shining than the following species (*C. anisotomoides*).

The above description is reproduced from Sturm, as I have not seen the species. It has been taken in Hungary and Austria.

37. *C. anisotomoides*, Spence.

Choleva anisotomoides, Spence, Linn. Trans. xi. 156. 16.

Catops anisotomoides, Sturm, Deutschl. Fn. xiv. 42. 21. t. 278. f. c. C; Heer, Fn. Helv. i. 384. 20; Redt. Fn. Aust. 145. 16; Kraatz, Stett. Ent. Zeit. xiii. 439. 29; Fairm. & Laboulb. Fn. Ent. Fr. i. 304. 20.

Ovatus, piceus, nitidulus; antennis longioribus, obsolete clavatis; thorace transverso, basi latiore, margine postico recto, angulis posticis obtusis; elytris piceis seu rufo-piceis.

Long. $\frac{3}{4}$ lin.

Oval, very convex. Pale ferruginous-brown, somewhat shining, variable in depth of colour, deeper on the disk of the thorax and of the elytra, with a fine brown pubescence. Antennæ tolerably long, scarcely thickened at the extremity. Thorax transverse, as broad at the base as the base of the elytra, narrowed a little in front, very densely but finely punctate; posterior margin straight, posterior angles obtuse. Elytra elongate-oval, scarcely widening behind the base, then gradually becoming narrower; densely punctate, but not so finely as the thorax; suture raised; sutural stria deep, almost reaching the scutellum; no traces of other striæ to be seen. Legs and antennæ of the same colour as the body.

The smallness of its size, and its short and more convex form, distinguish it from *C. velox*. It is nearer in point of size to *C. præcox*, but the more elongate form of the latter and its differently shaped thorax distinguish it; and a tendency which it has to curl itself up like an *Agathidium* will suggest what it is.

Distributed over all Europe, and generally common. In Scotland and England it is scarcer; but in France and Germany it is very common. Fairmaire says it is found almost all the year round in vegetable detritus, principally on the banks of lakes and marshes.

Fig. 38.

